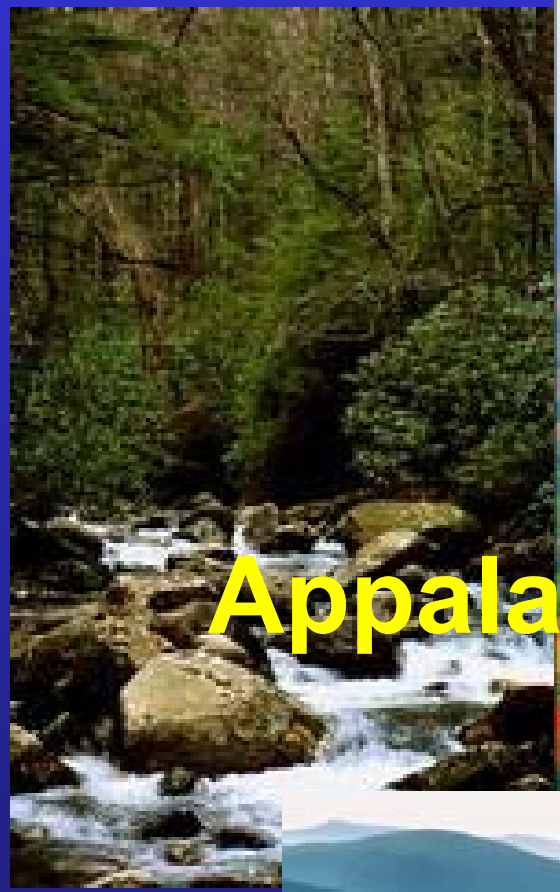
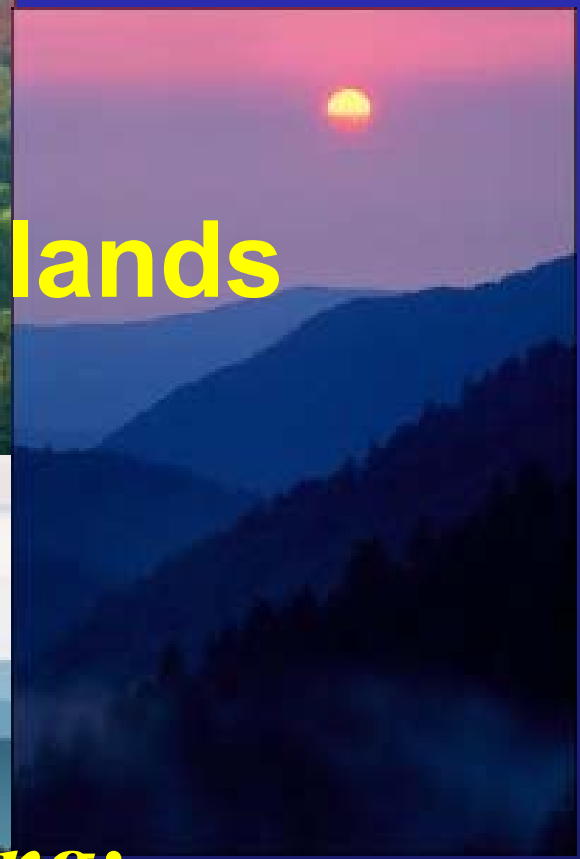
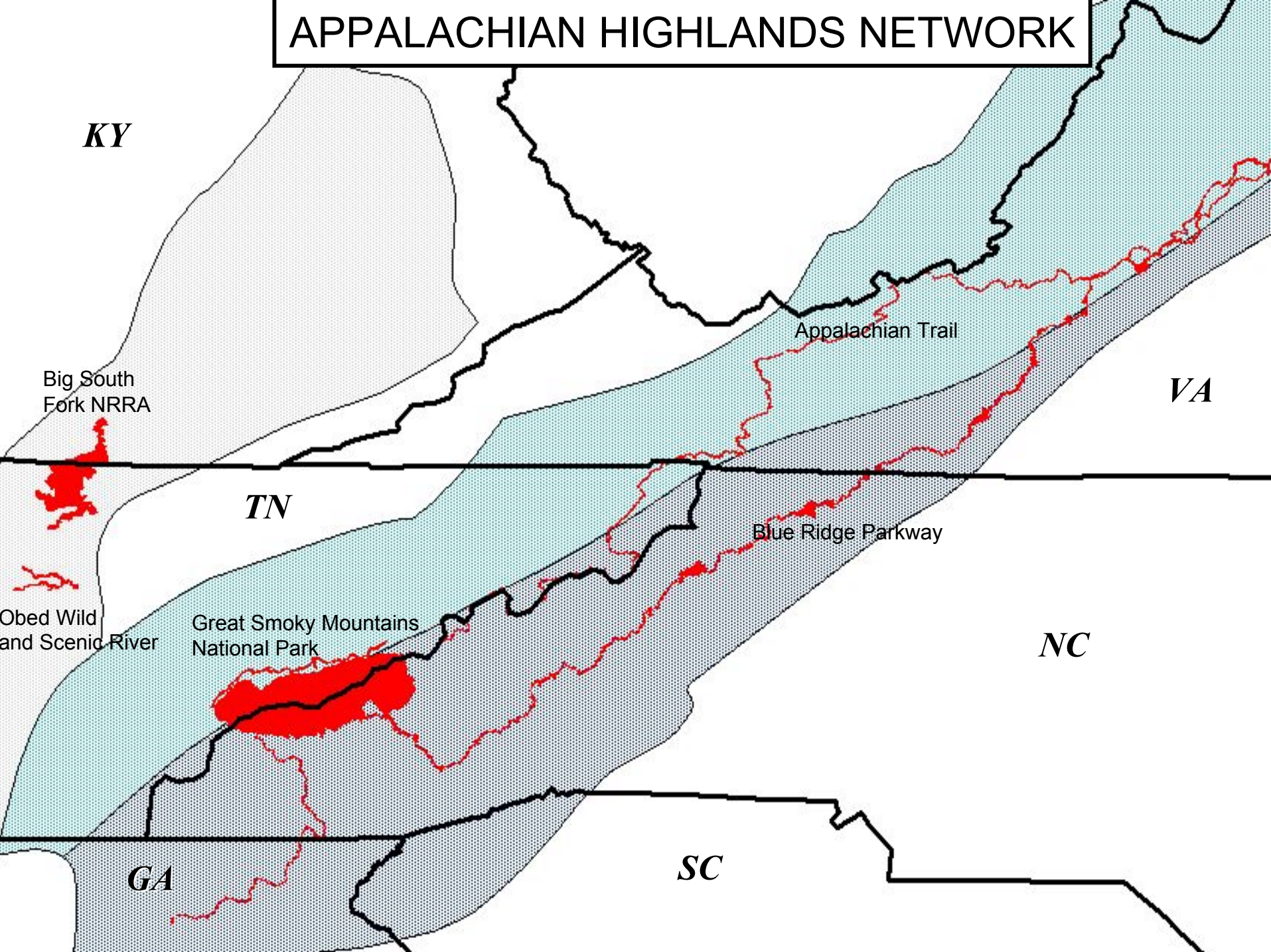





Appalachian Highlands Network

Vital Signs Planning: Progress to Date (08/02)


APPALACHIAN HIGHLANDS NETWORK
KY
VA
TN
NC
SC
GA
Appalachian Trail
Big South
Fork NRRA
Blue Ridge Parkway
Obed Wild
and Scenic River
Great Smoky Mountains
National Park

Organization:

- ***Charter*** **- signed in Spring, '02**
- ***Board of Directors*** **- composed of Superintendents from each park plus SERO I&M Coordinator (5 members)**
- ***Technical Committee*** **- composed of one NR professional from each park plus NPS CESU representative plus network coordinator and ecologist (7 members)**
- ***Network Staff*** **- Currently composed of Coordinator, Ecologist. Data management through Coop. Agmnt. with Virginia Tech**

Approach:

- Questionnaire and Workshop for park Resource/Science staff resulting in a compilation of significant resources and important management issues

APPALACHIAN HIGHLANDS NETWORK - - VITAL SIGNS WORKSHOP
(October 18-19, 2001)
Table of Significant Natural Resources

PARK	NATURAL RESOURCES SIGNIFICANT TO ENABLING LEGISLATION	NATURAL RESOURCES SIGNIFICANT TO OTHER LEGAL MANDATES/POLICY	NATURAL RESOURCES SIGNIFICANT TO PERFORMANCE MANAGEMENT GOALS (GPRA)	NATURAL RESOURCES SIGNIFICANT FOR OTHER REASONS
APPA	Nationally significant scenic and natural qualities of lands through which the trail passes	8 Federally-listed species: -Carolina northern flying squirrel -Virginia northern flying squirrel -spruce-fir moss spider -spreading avens -Roan Mountain bluet -rock gnome lichen -Shenendoah salamander Wetlands/floodplains Migratory birds	-restoration of disturbed lands -invasive exotic plants -ID of vital signs for monitoring -water quality -T&E species	-8 G1 and 29 G2 species -Globally-imperilled communities, including red spruce-Fraser fir forests, Southern Appalachian grassy balds, Southern Appalachian Mountain bogs

APPALACHIAN HIGHLANDS NETWORK - - VITAL SIGNS WORKSHOP
(October 18-19, 2001)
Table of Management Issues

Park	Priority	Management Issues	Significant Natural Resources Impacted	Monitoring Questions	Potential Indicators	Potential Cooperators/ Funding Sources	Potential Management Actions
BISO BLRI OBRI GRSM APPA	MEDIUM HIGH MEDIUM HIGH HIGH	**AIR QUALITY**	Southern Appalachian brook trout, aquatic T&E species, possibly some terrestrial T&E species (lichens), high-elevation forests	-effects of calcium loss from high-elevation ecosystems -effects on plant populations/natural communities -effects on visibility -effects on human health	Amphibians Ozone-sensitive plants particulates ozone Ca/Al balance in streamwater	EPA, TVA, US Forest Service	Public education; permit review

Big South Fork National River and Recreation Area (BISO)

SIGNIFICANT RESOURCES:

- ***Water Quality/Quantity***
- ***T&E (Freshwater Mussels)***
- ***Cliffline/Rockshelters/Arches***

MANAGEMENT ISSUES:

- ***Water Pollution/Water Withdrawal (External)***
- ***Acid Mine Drainage (Internal)***
- ***Oil and Gas Extraction (Internal)***

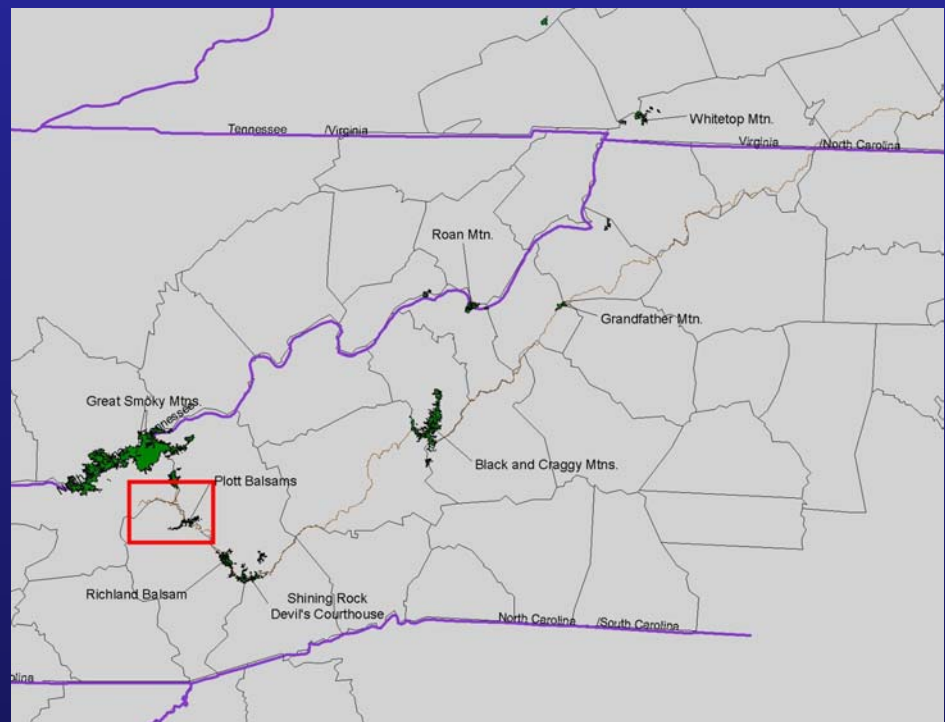
Blue Ridge Parkway (BLRI)

SIGNIFICANT RESOURCES:

- ***High Elevation Communities***
- ***T&E***
- ***Breeding Bird Habitat/Migratory Bird Pathway***

MANAGEMENT ISSUES:

- ***Air Quality***
- ***Forest Insects and Diseases***
- ***Poaching***



Appalachian Trail (ATPO) - southern section:

SIGNIFICANT RESOURCES:

- ***T&E (8 Federally-listed in AHN)***
- ***High Elevation Communities***

MANAGEMENT ISSUES:

- ***Air Quality***
- ***Water Quality***
  (esp. drinking water sources)
- ***Invasive Species (esp. plants)***

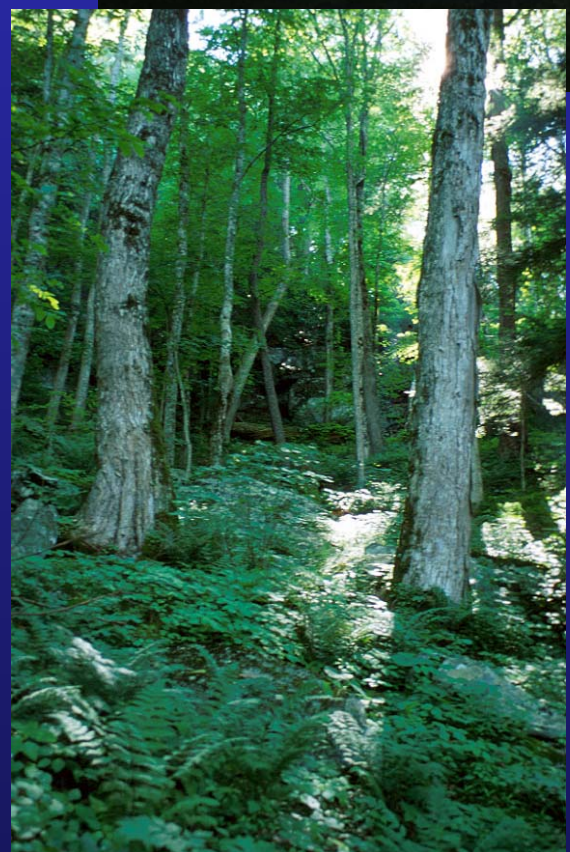
Great Smoky Mountains National Park (GRSM):

SIGNIFICANT RESOURCES:

- ***Species Diversity***
- ***High Elevation Communities***
- ***Old Growth Forest***

MANAGEMENT ISSUES:

- ***Air Quality***
- ***Forest Insects and Diseases***
- ***Water Quality***



Air Pollution
(Look Rock, GRSM)

Visual Range: 100 miles

Visual Range: 20 miles

Obed Wild and Scenic River (OBRI):

SIGNIFICANT RESOURCES:

- ***ONRW***
- ***T&E Species***
- ***Exemplary Natural Communities***

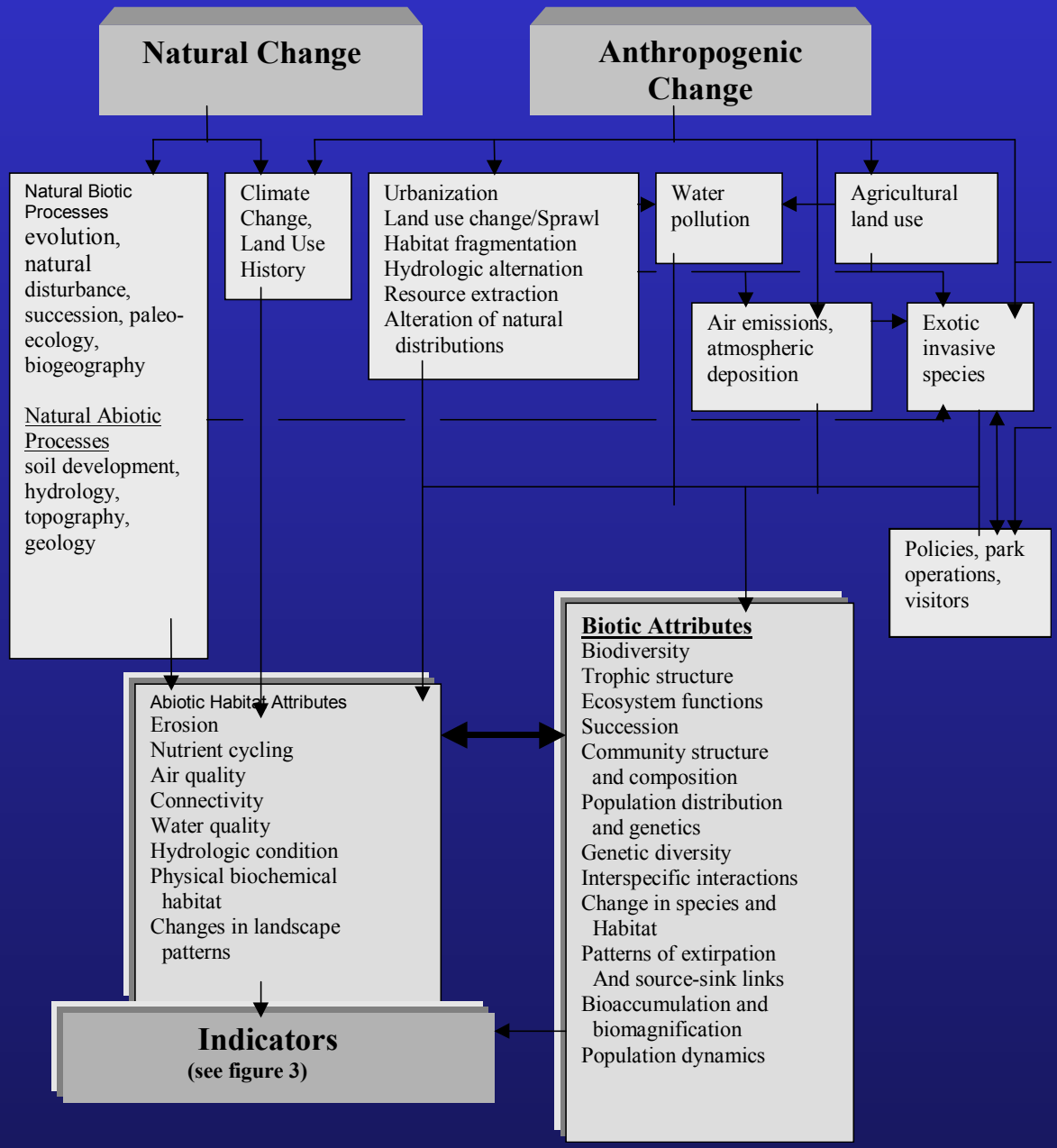
MANAGEMENT ISSUES:

- ***Water quality***
- ***Water quantity***
- ***Development (External)***

Approach (cont.):

- **Held a conceptual modeling workshop jointly with the Cumberland Piedmont Network to obtain a broad landscape perspective on the issues common to NPS units in the southern Appalachian region**
- **Invited outside experts**
- **Developed generalized terrestrial and aquatic models**

Conceptual Model Example from Draft Network Report. The more detailed "working" terrestrial ecological conceptual model illustrates the drivers/stressors, responses, and some important relationships between them.



Approach (cont.):

- **Next steps involve a more detailed consideration of monitoring questions, target conditions, indicators, and thresholds which may trigger management action**

Integration w/ Other Programs:

- Water quality assessment/analysis and monitoring plan development (w/ USGS WRD) proceeding on a parallel track
- ARD (Toni Maniero) is advising the network on integrating air quality concerns/protocols into vital signs planning
- NPS fire ecologists (SERO) are participating in the planning effort

Successes/Stumbling Blocks:

- Importance of good communication with network parks
- Heavy workload at start-up increases the importance of seeking outside help!
- Benefit of locating network staff within parks